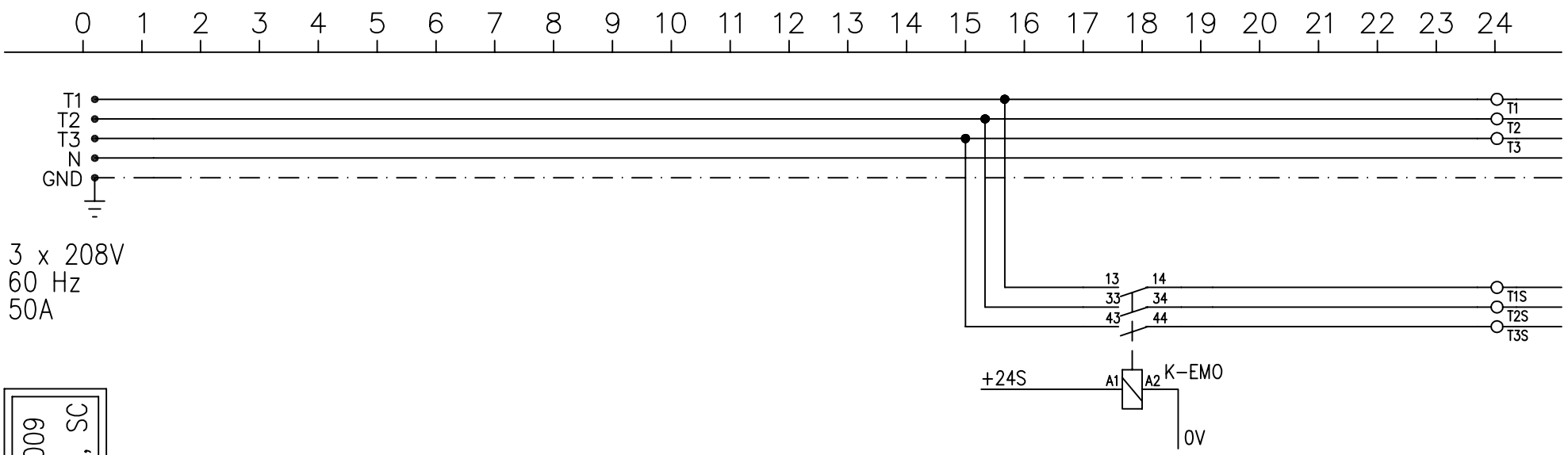
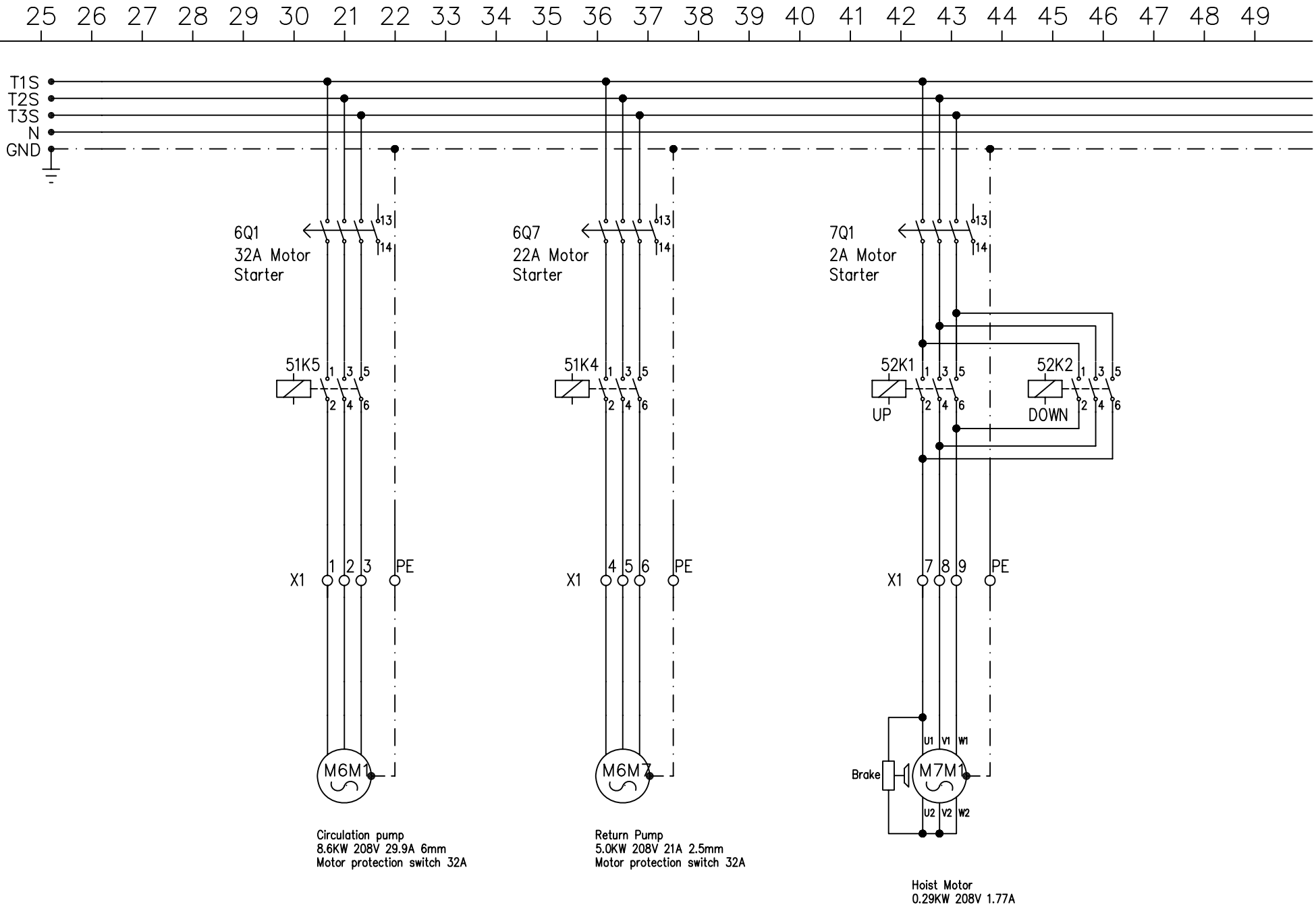


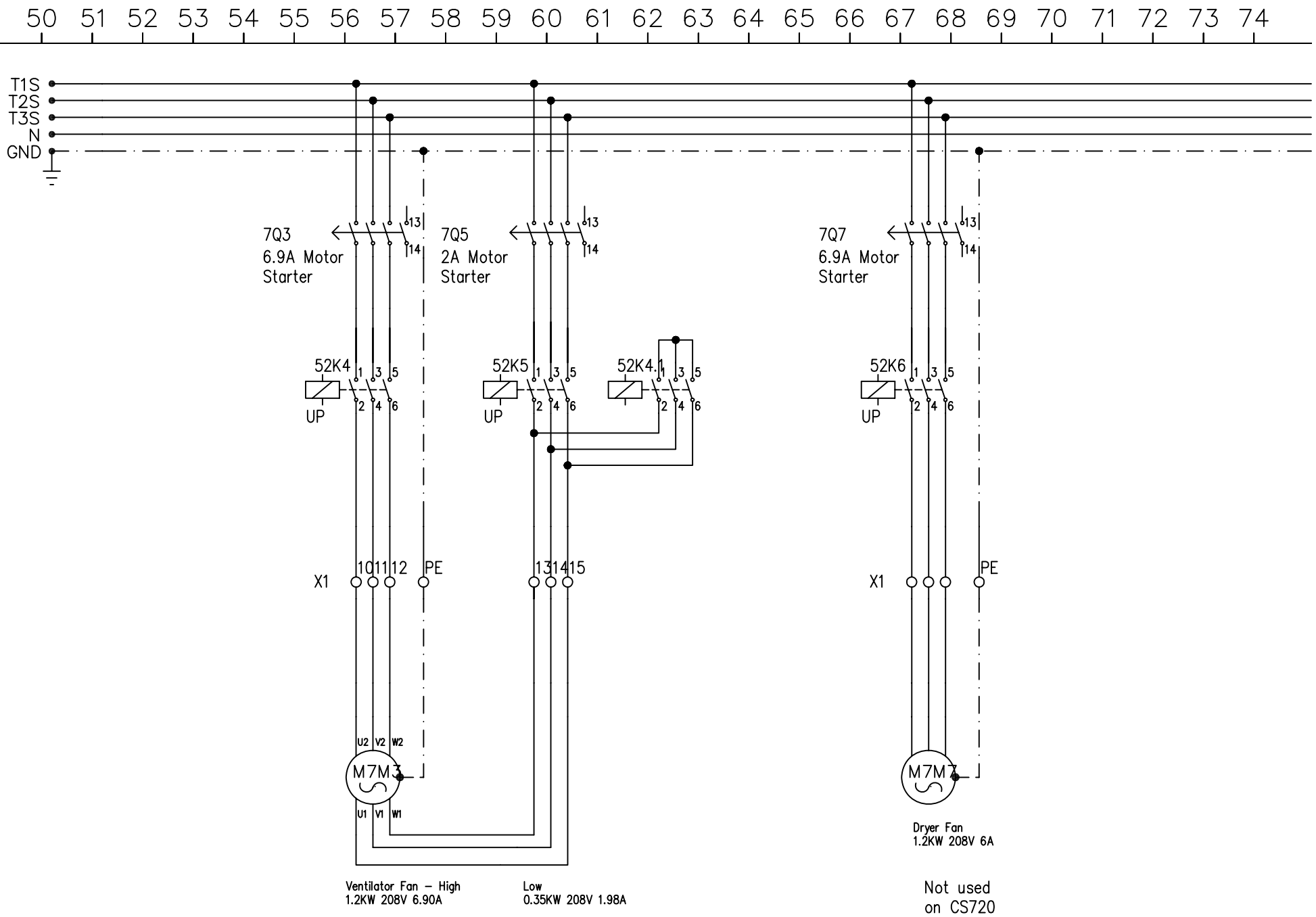
TSX3721

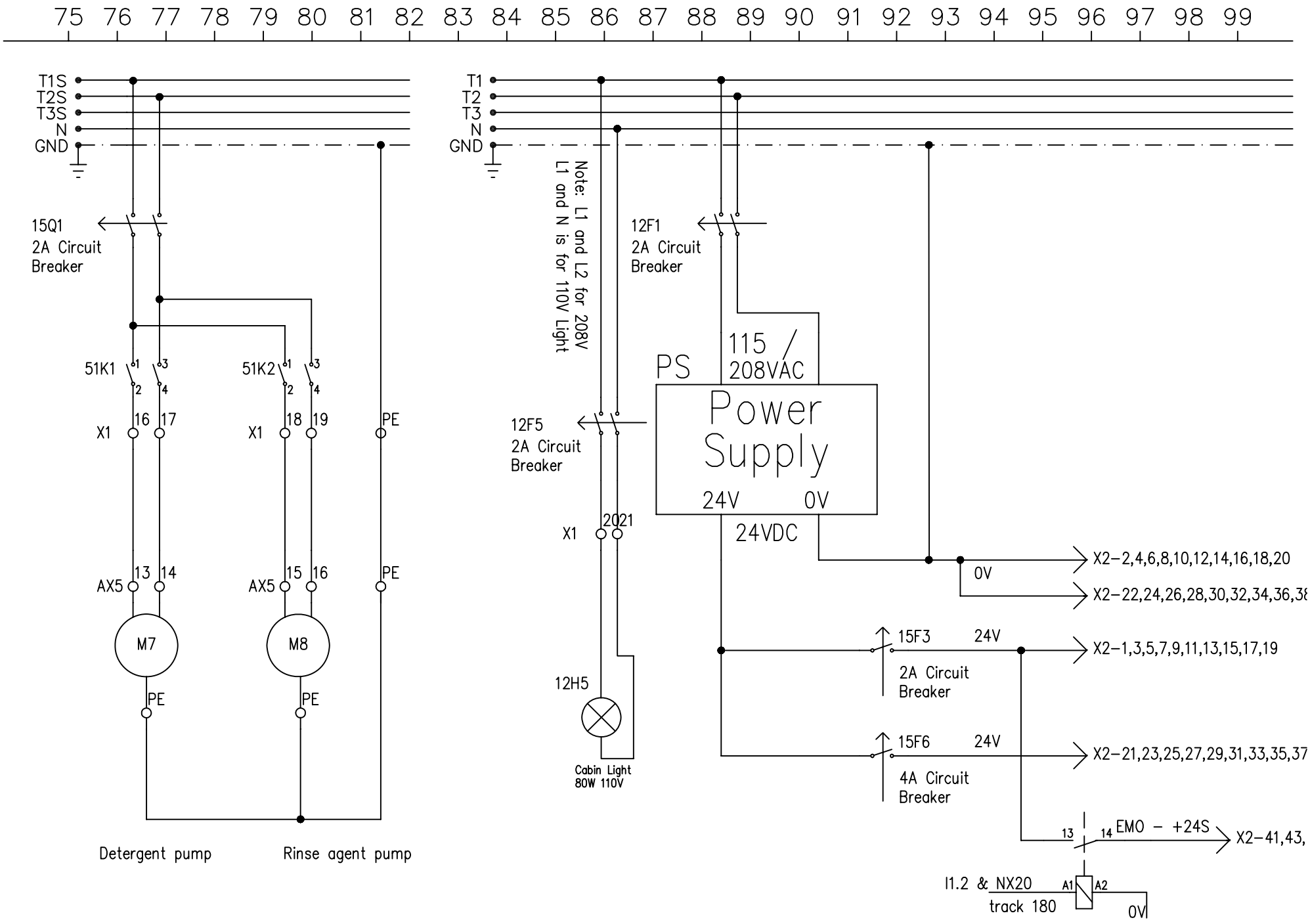
Module 1	16I	A0	TSXDMZ128DTK
	12O	B0	
Module 2	32I	A0,A1	TSXDMZ64DTK
	32O	B0,B1	

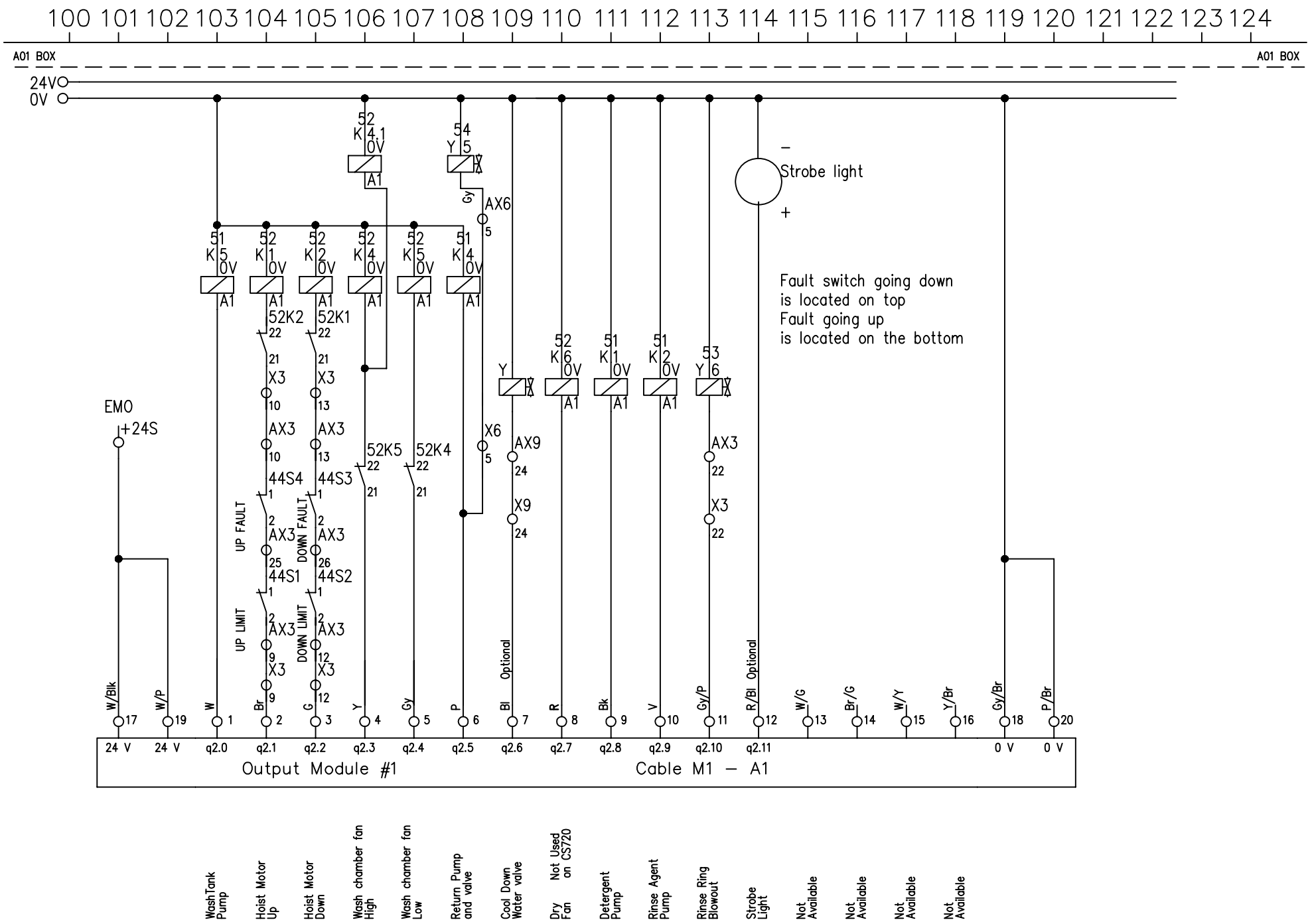
Manual Load Cartwasher CS720 & CS721 Aug. 5, 2009 Charleston, SC

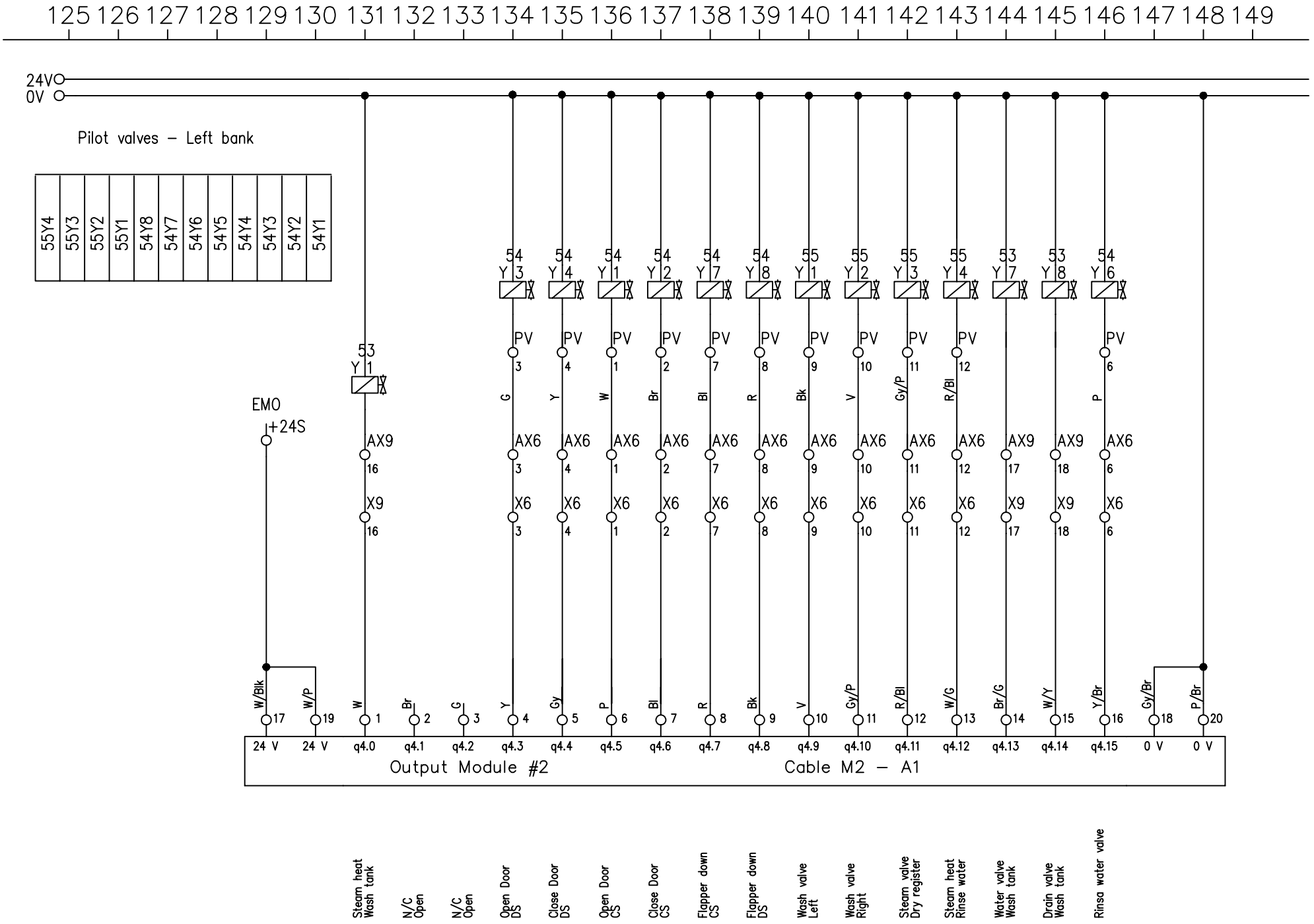
Manual Cartwasher CS721-4

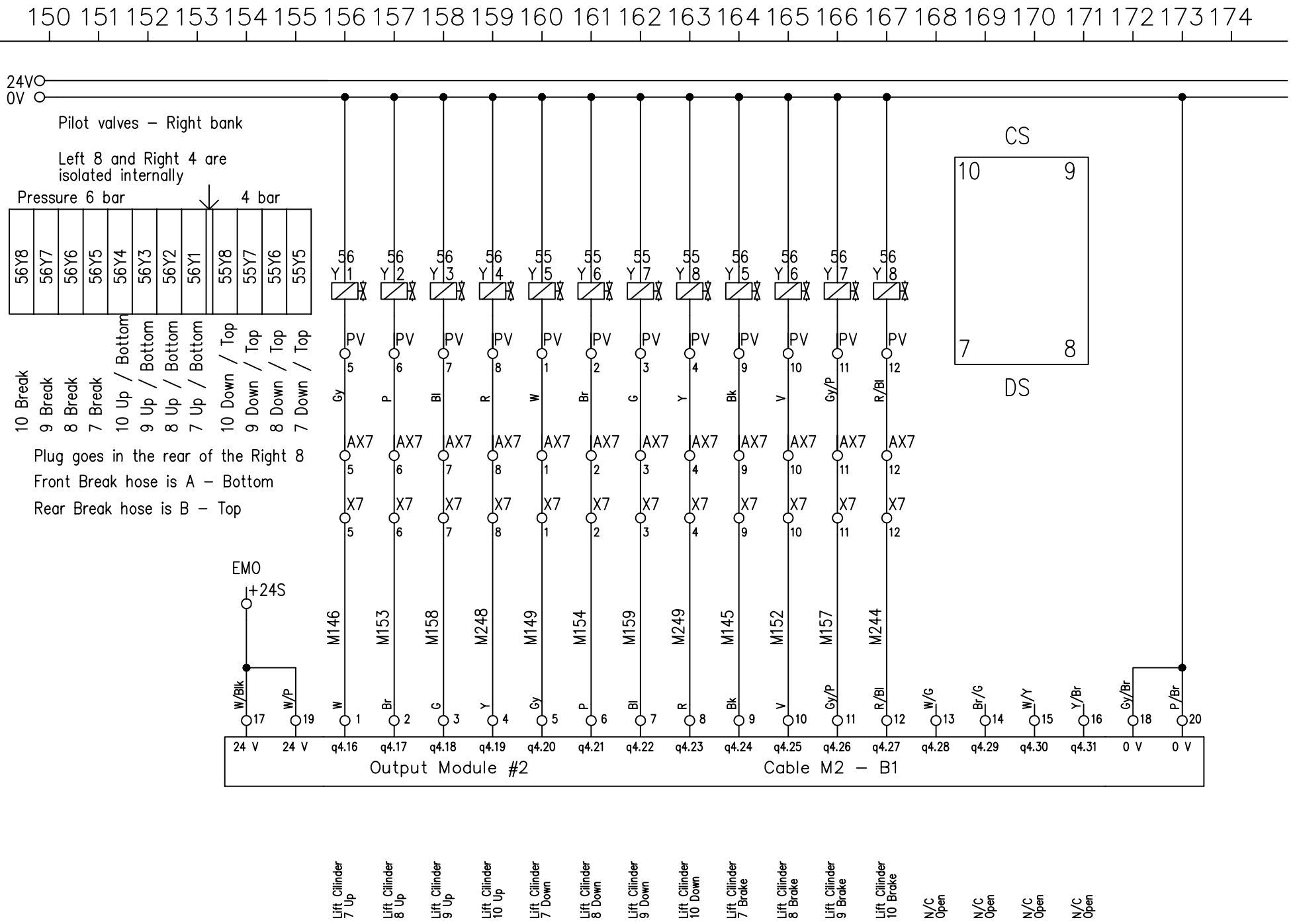

25 26 27 28 29 30 21 22 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49
T1S
T2S
T3S
N
GND
6Q1
32A Motor
Starter
13
14
51K5
1 3 5
2 4 6
X1
1 2 3
PE
M6M1
Circulation pump
8.6KW 208V 29.9A 6mm
Motor protection switch 32A
6Q7
22A Motor
Starter
13
14
51K4
1 3 5
2 4 6
X1
4 5 6
PE
M6M7
Return Pump
5.0KW 208V 21A 2.5mm
Motor protection switch 32A
7Q1
2A Motor
Starter
13
14
52K1
UP
52K2
DOWN
1 3 5
2 4 6
X1
7 8 9
PE
U1 V1 W1
Brake
M7M1
U2 V2 W2
Hoist Motor
0.29KW 208V 1.77A

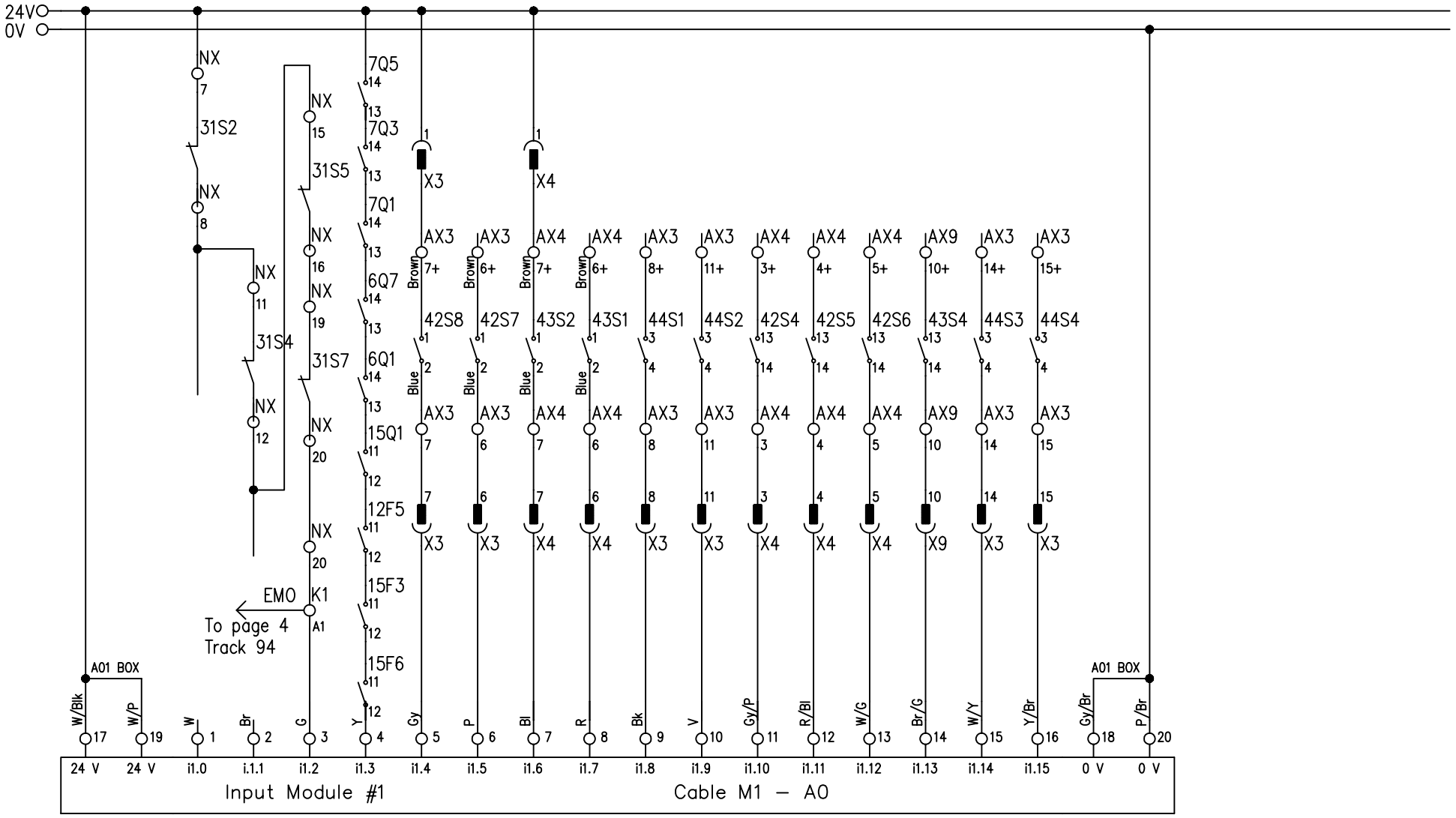

50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74
T1S
T2S
T3S
N
GND
7Q3
6.9A Motor
Starter
7Q5
2A Motor
Starter
7Q7
6.9A Motor
Starter
52K4
52K5
52K4.1
52K6
UP
X1
10 11 12 PE
13 14 15
U2 V2 W2
M7M3
U1 V1 W1
M7M7
Ventilator Fan – High
1.2KW 208V 6.90A
Low
0.35KW 208V 1.98A
Dryer Fan
1.2KW 208V 6A
Not used
on CS720


75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
T1S
T2S
T3S
N
GND
15Q1
2A Circuit
Breaker
51K1
51K2
X1
16 17
18 19
PE
AX5
13 14
15 16
M7
M8
Detergent pump
Rinse agent pump
T1
T2
T3
N
GND
Note: L1 and L2 for 208V
L1 and N is for 110V Light
12F1
2A Circuit
Breaker
PS
115 / 208VAC
Power Supply
24V 0V
24VDC
12F5
2A Circuit
Breaker
X1
2021
12H5
Cabin Light
80W 110V
X2-2,4,6,8,10,12,14,16,18,20
0V
X2-22,24,26,28,30,32,34,36,38
15F3
24V
2A Circuit
Breaker
X2-1,3,5,7,9,11,13,15,17,19
15F6
24V
4A Circuit
Breaker
X2-21,23,25,27,29,31,33,35,37
13
14 EMO - +24S
X2-41,43,
I1.2 & NX20
track 180
A1
A2
0V

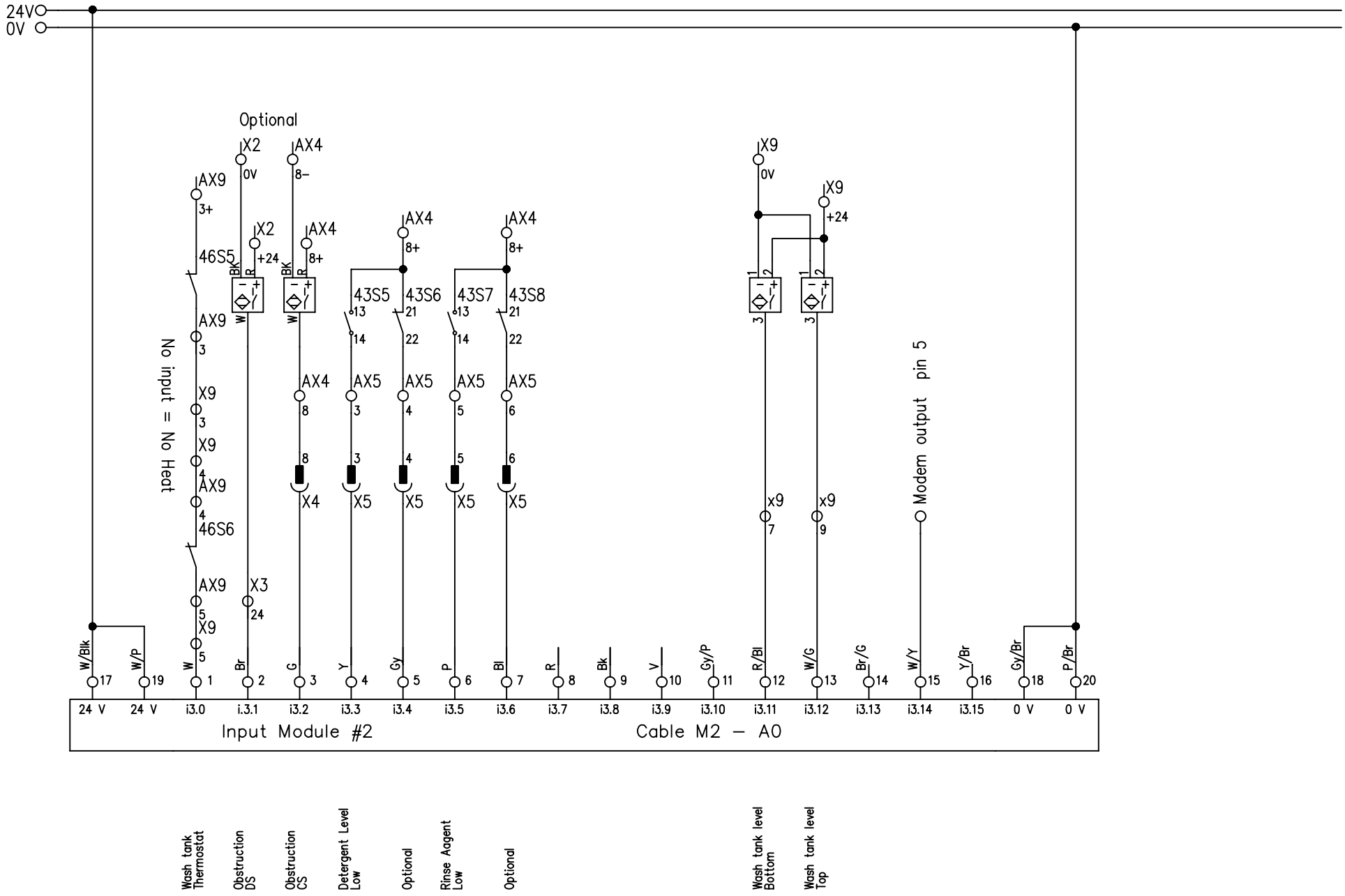

100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124
A01 BOX
A01 BOX
24V
0V
52 K4.1 0V A1
54 Y5 V A
Gy
AX6
5
Strobe light
+
51 K5 0V A1
52 K1 0V A1
52 K2 0V A1
52 K4 0V A1
52 K5 0V A1
51 K4 0V A1
52K2
52K1
22
21
X3
10
13
AX3
44S4
44S3
1
2
UP FAULT
DOWN FAULT
25
26
44S1
44S2
UP LIMIT
DOWN LIMIT
9
12
Fault switch going down
is located on top
Fault going up
is located on the bottom
Y
52 K6 0V A1
51 K1 0V A1
51 K2 0V A1
53 Y6 V A
EMO
+24S
52K5
52K4
X6
AX9
24
X9
Bl Optional
R/Bl Optional
W/Blk
W/P
W
Br
G
Y
Gy
P
Bl
R
Bk
V
Gy/P
R/Bl
W/G
Br/G
W/Y
Y/Br
Gy/Br
P/Br
17
19
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
18
20
24 V
24 V
q2.0
q2.1
q2.2
q2.3
q2.4
q2.5
q2.6
q2.7
q2.8
q2.9
q2.10
q2.11
0 V
0 V
Output Module #1
Cable M1 – A1
Wash Tank Pump
Hoist Motor Up
Hoist Motor Down
Wash chamber fan High
Wash chamber fan Low
Return Pump and valve
Cool Down Water valve
Dry Fan
Not Used on CS720
Detergent Pump
Rinse Agent Pump
Rinse Ring Blowout
Strobe Light
Not Available
Not Available
Not Available
Not Available

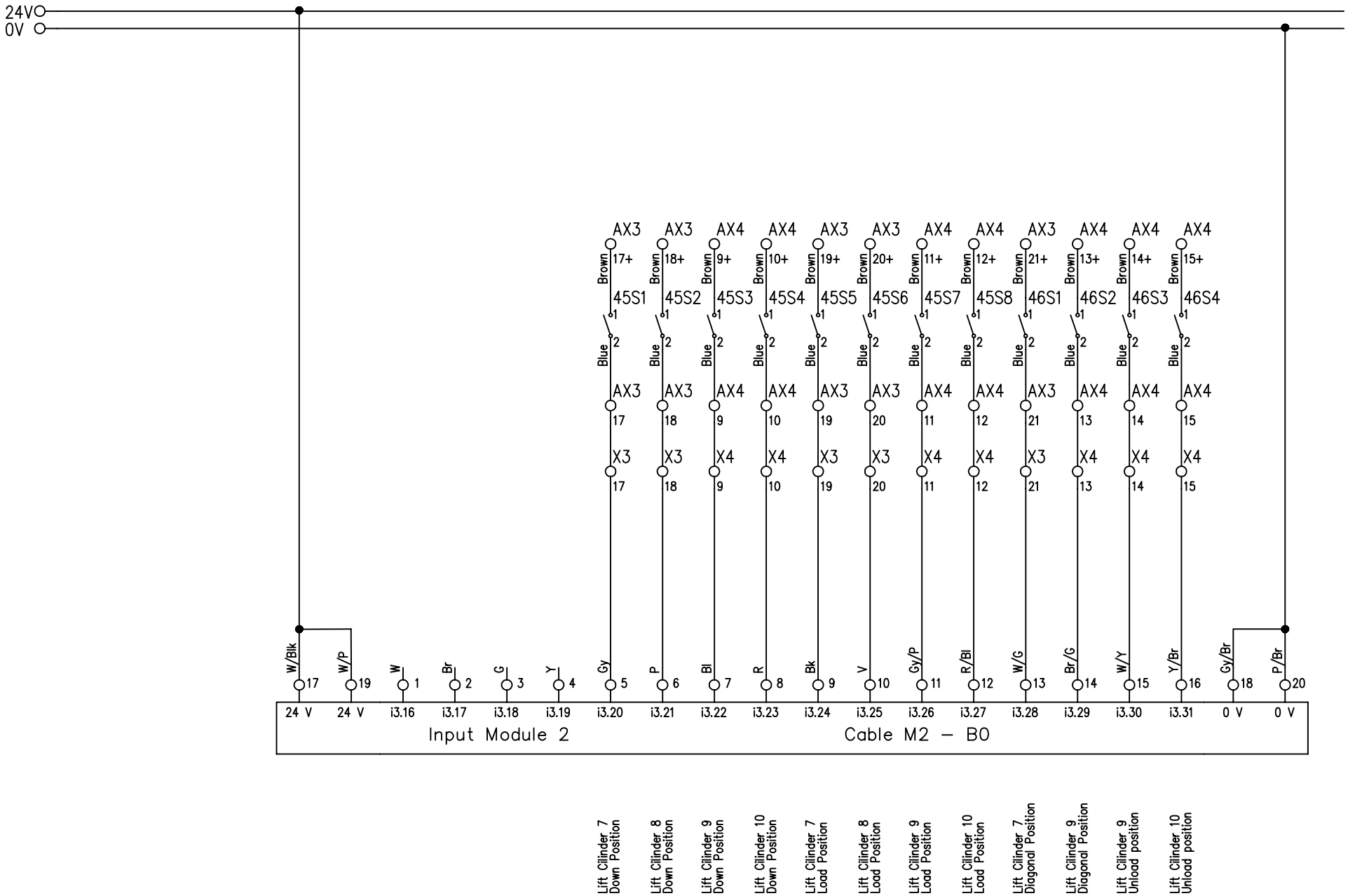

125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149
24V
0V
Pilot valves – Left bank
55Y4 55Y3 55Y2 55Y1 54Y8 54Y7 54Y6 54Y5 54Y4 54Y3 54Y2 54Y1
EMO
+24S
53 Y 1
54 Y 3
54 Y 4
54 Y 1
54 Y 2
54 Y 7
54 Y 8
55 Y 1
55 Y 2
55 Y 3
55 Y 4
53 Y 7
53 Y 8
54 Y 6
PV
AX9
AX6
X9
X6
W/Blk
W/P
W
Br
G
Y
Gy
P
Bl
R
Bk
V
Gy/P
R/Bl
W/G
Br/G
W/Y
Y/Br
Gy/Br
P/Br
24 V
24 V
q4.0
q4.1
q4.2
q4.3
q4.4
q4.5
q4.6
q4.7
q4.8
q4.9
q4.10
q4.11
q4.12
q4.13
q4.14
q4.15
0 V
0 V
Output Module #2
Cable M2 – A1
Steam heat Wash tank
N/C Open
N/C Open
Open Door DS
Close Door DS
Open Door CS
Close Door CS
Flapper down CS
Flapper down DS
Wash valve Left
Wash valve Right
Steam valve Dry register
Steam heat Rinse water
Water valve Wash tank
Drain valve Wash tank
Rinsa water valve

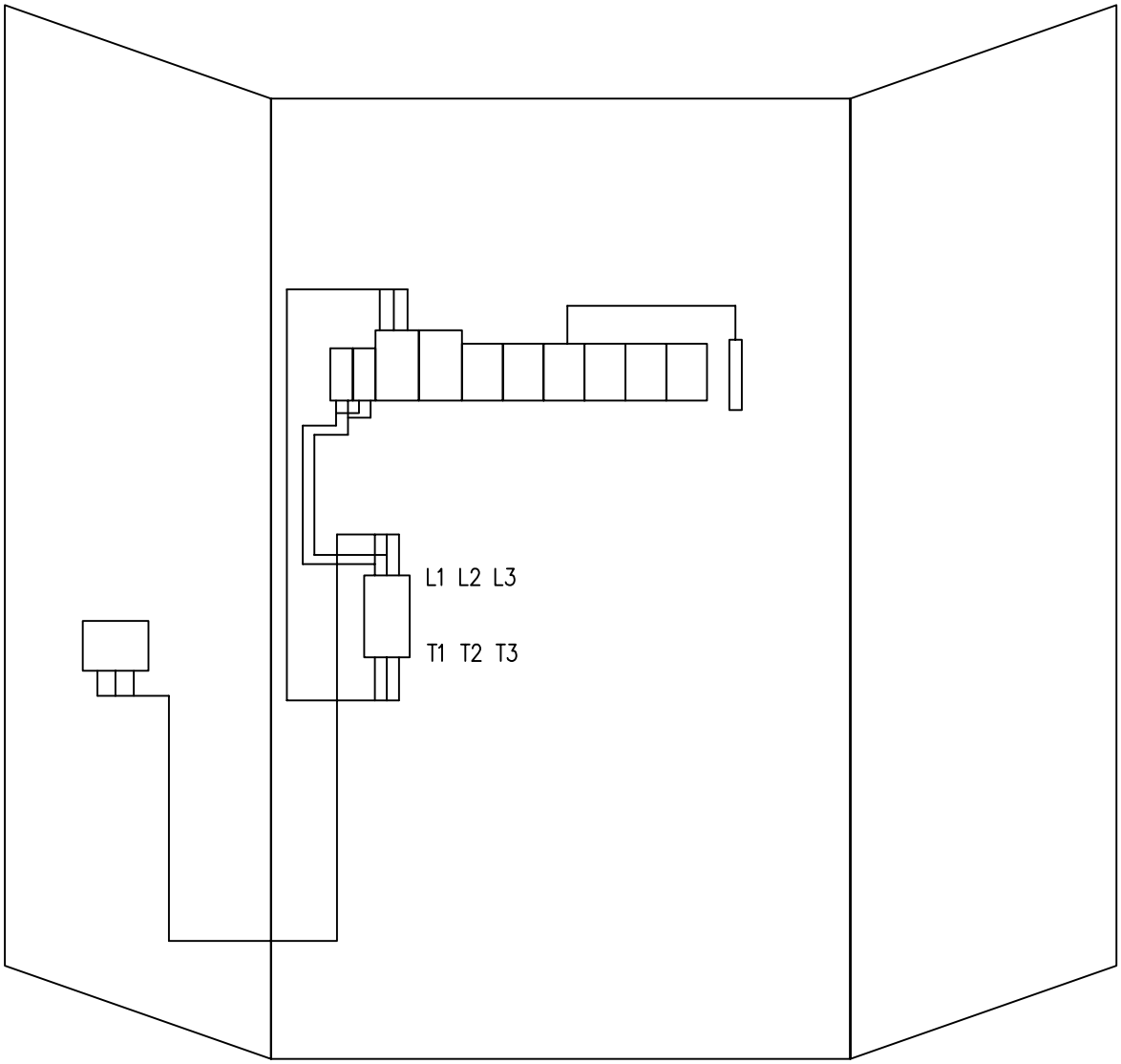

150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174
24V
0V
Pilot valves – Right bank
Left 8 and Right 4 are isolated internally
Pressure 6 bar
4 bar
56Y8 56Y7 56Y6 56Y5 56Y4 56Y3 56Y2 56Y1 55Y8 55Y7 55Y6 55Y5
10 Break 9 Break 8 Break 7 Break 10 Up / Bottom 9 Up / Bottom 8 Up / Bottom 7 Up / Bottom 10 Down / Top 9 Down / Top 8 Down / Top 7 Down / Top
Plug goes in the rear of the Right 8
Front Break hose is A – Bottom
Rear Break hose is B – Top
CS
10 9
7 8
DS
EMO
+24S
W/Blk W/P
M146 M153 M158 M248 M149 M154 M159 M249 M145 M152 M157 M244
Gy P Bl R W Br G Y Bk V Gy/P R/Bl
W/G Br/G W/Y Y/Br Gy/Br P/Br
24 V 24 V q4.16 q4.17 q4.18 q4.19 q4.20 q4.21 q4.22 q4.23 q4.24 q4.25 q4.26 q4.27 q4.28 q4.29 q4.30 q4.31 0 V 0 V
Output Module #2
Cable M2 – B1
Lift Cilinder 7 Up
Lift Cilinder 8 Up
Lift Cilinder 9 Up
Lift Cilinder 10 Up
Lift Cilinder 7 Down
Lift Cilinder 8 Down
Lift Cilinder 9 Down
Lift Cilinder 10 Down
Lift Cilinder 7 Brake
Lift Cilinder 8 Brake
Lift Cilinder 9 Brake
Lift Cilinder 10 Brake
N/C Open
N/C Open
N/C Open
N/C Open



EMO CS – S41
Input 0 + DS – S42
Input 1 + S43 & S44
All Ckt. breakers
DS Door open
DS door closed
CS Door open
CS Door closed
Spray ring up
Spray ring down
Close Door CS 1
Close Door CS 2
Open Door CS
Wash pump pressure
Spray Ring Blocked Going Down
Spray Ring Blocked Going Up


24V
0V
Optional
X2
0V
AX4
8-
AX9
3+
X2
+24
AX4
8+
46S5
BK
R
W
43S5
43S6
43S7
43S8
13
14
21
22
AX9
3
X9
3
X9
4
AX9
4
46S6
AX4
8
AX5
3
AX5
4
AX5
5
AX5
6
X4
X5
X5
X5
X5
AX9
5
X9
5
X3
24
No input = No Heat
X9
0V
X9
+24
x9
7
x9
9
Modem output pin 5
W/Blk
17
W/P
19
W
1
Br
2
G
3
Y
4
Gy
5
P
6
Bl
7
R
8
Bk
9
V
10
Gy/P
11
R/Bl
12
W/G
13
Br/G
14
W/Y
15
Y/Br
16
Gy/Br
18
P/Br
20
24 V
24 V
i3.0
i.3.1
i3.2
i3.3
i3.4
i3.5
i3.6
i3.7
i3.8
i3.9
i3.10
i3.11
i3.12
i3.13
i3.14
i3.15
0 V
0 V
Input Module #2
Cable M2 – A0
Wash tank Thermostat
Obstruction DS
Obstruction CS
Detergent Level Low
Optional
Rinse Aagent Low
Optional
Wash tank level Bottom
Wash tank level Top


24V
0V
AX3 AX3 AX4 AX4 AX3 AX3 AX4 AX4 AX3 AX4 AX4 AX4
Brown 17+ 18+ 9+ 10+ 19+ 20+ 11+ 12+ 21+ 13+ 14+ 15+
45S1 45S2 45S3 45S4 45S5 45S6 45S7 45S8 46S1 46S2 46S3 46S4
Blue
X3 X4
W/Blk W/P W Br G Y Gy P Bl R Bk V Gy/P R/Bl W/G Br/G W/Y Y/Br Gy/Br P/Br
17 19 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20
24 V 24 V i3.16 i3.17 i3.18 i3.19 i3.20 i3.21 i3.22 i3.23 i3.24 i3.25 i3.26 i3.27 i3.28 i3.29 i3.30 i3.31 0 V 0 V
Input Module 2
Cable M2 – B0
Lift Cilinder 7 Down Position
Lift Cilinder 8 Down Position
Lift Cilinder 9 Down Position
Lift Cilinder 10 Down Position
Lift Cilinder 7 Load Position
Lift Cilinder 8 Load Position
Lift Cilinder 9 Load Position
Lift Cilinder 10 Load Position
Lift Cilinder 7 Diagonal Position
Lift Cilinder 9 Diagonal Position
Lift Cilinder 9 Unload position
Lift Cilinder 10 Unload position



Move metering pump power
from 12F1 to 15Q1

Move power supply power
from 15Q1 to 12F1

Remove power input from the
right side of 12F5 and discard

Remove output wire from the
right side of 12F5 – Replace wire
with a white wire and reroute to "N"
It should now go from X1–24 to N

==========

Power routing

3 Wires
From power switch to top side of K–EMO (L1,2&3)
3 Wires
From bottom side of K–EMO to 6Q1 (T1,2&3)
2 wires
From 12F1 to top side of K–EMO (L1&3)
1 Wire
From 12F5 to top side of K–EMO (L2)